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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WALLACE, SCOTT A

ART UNIT

PAPER NUMBER

2671

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/552,857

Applicant(s)

WHALEY, JEFFREY ALLEN

Examiner

Scott Wallace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18,22 - 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 22-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Response to Arguments

1. Applicant's arguments with respect to claims 1-18 and 22-23 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the common connection between the first and second connections of claim 2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm et al., U.S. Patent No. 6,198,488 in view of Wood et al., U.S. Patent No. 6,028,590.
5. As per claim 1, Lindholm et al discloses a plurality of logic units (fig 1A), wherein the plurality of logic units are used to perform a graphics operation in which a set of constants is required for the graphics operation (column 3 lines 65-67 and column 4 lines 1-7); a first set of

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connections connecting the plurality of logic units to each other (fig 1A). However, Lindholm et al does not disclose wherein the first set of connections are used to configure the plurality of logic units to determine the set of constants; and a second set of connections connecting the plurality of logic units, wherein the second set of connections configure the plurality of logic units to perform the graphics operation in which the graphics operation using the constants is determined through the first set of connections. Wood et al discloses determining constants for a logic unit (color conversion) and using the constants with the logic unit (color conversion, column 1 lines 35-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate the constants as in Wood et al with the system of Lindholm et al because generating the constants when needed obviates the need for a look a table. Although, neither Lindholm et al or Wood et al disclose the logic units with two connections, Lindholm et al shows only one connection in fig 1A, therefore generating the constants and using them are done thru one connection only, so using two connections just takes up more circuitry and does not make it patentably distinct.

6. As per claim 2, Wood et al discloses wherein the first set of connections and the second set of connections include common connections (fig 3A). The word "common" is broad and the logic units could have connections in common almost anywhere.

7. As per claims 3 and 13, Lindholm and Wood do not disclose wherein the graphics operation is a generation of a fog factor. This disclosed in Rohner in the abstract. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use generate fog factor as a graphics operation with the systems of Linholm and Wood because this was a well known graphics logic unit for flight simulators.

8. As per claims 4 and 14, Lindholm and Wood do not disclose wherein the graphics operation is a viewport transformation. This disclosed in Rohner in column 2 lines 60-63. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use viewport transformation as a graphics operation with the systems of Linholm and Wood because this was a well known graphics logic unit for flight simulators.

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9. As per claims 5 and 11, Lindholm and Wood do not disclose wherein the constants are stored in memory. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a memory to store the constants because this would have allowed reuse of the constants.

10. As per claim 6, Lindholm and Wood do not disclose wherein the constants are stored in a set of registers, however this would have been obvious to one of ordinary skill in the art at the time the invention was made because using registers to store information was well known.

11. As per claim 7, Lindholm et al discloses wherein the apparatus is a graphics adapter (abstract).

12. As per claims 8 and 18, Lindholm and Wood do not specifically disclose a storage unit, wherein the set of constants are stored in the storage unit such that redetermination of the set of constants for subsequent graphics operations is unnecessary until the set of constants change. This would have been obvious to one of ordinary skill in the art because Wood discloses generating constants depending on some values, if those values were to change then the constants would also change.

13. As per claims 9 and 12, Lindholm and Wood do not disclose wherein the storage is a set of registers, however this would have been obvious to one of ordinary skill in the art at the time the invention was made because using registers to store information was well known.

14. As per claim 10, Lindholm et al discloses a graphics pipeline comprising: an input (fig 1 A), wherein the input receives graphics data (fig 1A); an output (fig 1A), wherein the output transmits processed graphics data (fig 1A); and a plurality of stages (visibility logic, fog mixer etc.), wherein a first stage within the plurality of stages is connected to the input (fig 1A) and a last stage within the plurality of stages is connected to the output (fig 1A). However, Lindholm et

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al does not disclose wherein a selected stage within the plurality of stages includes a plurality of modes of operation including: a first mode of operation in which the selected stage is configured to determine constants for use in performing a graphics operation; and a second mode of operation in which the selected stage is configured to perform the graphics operation using the constants. Wood et al discloses determining constants for a logic unit (color conversion) and using the constants with the logic unit (color conversion, column 1 lines 35-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate the constants as in Wood et al with the system of Lindholm et al because generating the constants when needed obviates the need for a look a table.

15. As per clam 15, Lindholm et al discloses wherein the output is connected to a raster engine (fig 1A).

16. As per claim 16, Lindholm et al discloses wherein the input is connected to the raster engine (fig 1A).

17. As per claim 17, Lindholm et al discloses wherein the input and the output are located in a raster interface unit (fig 1A).

18. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm et al., U.S. Patent No. 6,198,488 in view of Wood et al., U.S. Patent No. 6,028,590 in further in view of Rohner, U.S. Patent No. 6,064,392.

19. As per claim 22, Lindholm et al discloses an input configured to receive graphics data (fig 1A); a geometry engine wherein the geometry engine receives graphics data, processes the graphics data to form the processed graphics data, wherein the geometry engine includes a set of processing elements in which at least one processing element within the set of processing elements includes a set of logic units (fig 1A). However, Lindholm et al does not disclose in which the set of logic units is used to perform an operation on the graphics data using an equation and wherein a portion of the set of logic units is used to determine at least one constant for the equation used in the operation. This is disclosed in Wood et al in column 1 lines 30-50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine constants with the system of Lindholm because generating the constants when needed obviates the need for a look a table. Also, Lindholm et al does not specifically mention frame buffers with raster engine. This is disclosed in Rohner in column 4 lines 29-35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use frame buffer with the system of Linholm et al because Rohner also uses constants with graphic operations which could be animations or anything that requires frames which would require frame buffers.

20. As per claims 23, Lindholm and Wood do not specifically disclose a storage unit, wherein the at least one processing element includes a storage to store the constant determined by the portion of the set of logic units such that redetermination of the at least one constant for additional operations on other graphics data is unnecessary until the at least one constant changes. This would have been obvious to one of ordinary skill in the art because Wood discloses generating constants depending on some values, if those values were to change then the constants would also change.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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Matthew C. Bella

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